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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,835	04/13/2001	Johan Van Brabant	64251-020	4292

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09/09/2003

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EXAMINER

JACKSON, MONIQUE R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/09/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/834,835

Applicant(s)

BRABANT ET AL.

Examiner

Monique R Jackson

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15-32 is/are pending in the application.
- 4a) Of the above claim(s) 22-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/22/03 has been entered.
2. The amendment filed 5/22/03 has been entered. Claims 1-32 are pending in the application. Claims 22-32 have been withdrawn from consideration.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

4. Claim 18 is objected to because of the following informalities: Claim 18 recites "a group selected from polymers of the coating" however it is noted that the amended claim no longer contains a "group" and only refers to one element, i.e. "polymers", hence for simplicity and clarity, the term "a group selected from" should be deleted. Appropriate correction is required.
5. Claim 19 is objected to because of the following informalities: on line 26, "AR" should be "Ar" given that Claim 19 depends from Claim 18 which recites "Ar".

Claim Rejections - 35 USC § 112

6. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As

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recited in the prior office action, Claim 17 recites the limitation "metal reinforcement element according to claim 1, wherein the functional group include thiol groups,...all of these functional groups either as terminal groups or carried along the polymer backbone or as part of side chains, further including epoxy groups carried along the polymer backbone." However, it is noted that the original disclosure at the time of filing does not provide support for a polymer bearing functional groups covalently bound to the metal surface wherein the polymer includes **all** of the functional groups above **and** epoxy groups as instantly claimed.

7. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Though Claim 19 as now amended is in better form than previously presented, it is noted that the claim is still indefinite for the items listed for "X" as well as "R" are still not presented in proper alternative format. The Examiner suggests inserting the term "or" after "phythalonitrile group;" on line 9 and changing the ";" on line 19 to "or". Further, the phrase "namely" in line 10 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

8. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Garnier et al (USPN 6,087,519) for the reasons recited in paragraph 11 of the prior office action wherein the Examiner notes that instant Claim 11 is directed to application of a prepolymer not a polymer.

9. Claims 1-5, 12, 15, 17 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated Roseboom et al (USPN 5,882,799.) Roseboom et al teach polymeric coupling agents for the adhesion of rubbers, such as EPDM, to metal substrates, such as steel and stainless steel, wherein

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the polymeric coupling agents incorporate within their structure co-vulcanizable groups such as alkenyl, epoxide, acrylate, and/or acrylamide groups, and metal-complexing groups such as carboxylic, oxime, amine, hydroxamic and/or iminodiacetic groups to covalently bond the rubber to the metal substrate; wherein the polymeric coupling agents are water or ethanol-soluble adhesives comprising a polymer backbone constituent based on organic synthetic polymers such as polyurethanes having the desired functional groups attached to the polymeric backbone (Abstract; Col. 2-Col. 4; Col. 20-21.) Roseboom et al teach that the polymeric coupling agents are applied to the metal substrate as a solution in water and/or ethanol wherein the metal substrate may be dip coated or sprayed by the polymeric coupling agent, dried and then the rubber can be molded on the substrate wherein upon curing, the polymeric coupling agent is co-vulcanized or crosslinked with the rubber (Col. 19, line 65-Col. 20, line 58.)

Claim Rejections - 35 USC § 103

10. Claims 6-10, 16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roseboom et al in view of Garnier et al. The teachings of Roseboom et al are discussed above. Roseboom et al further teach that the polymeric coupling agents can include spacers between the functional groups and the polymer backbone, but do not teach that a bifunctional adhesion promoter compound as instantly claimed is incorporated between the metal surface and the polymer coating. However, Garnier et al teach an adhesive substance for improved adhesion between a vulcanizable polymer and a metallic reinforcing carrier, such as a steel cord (*an elongated steel element as in instant claim 8*) wherein the adhesive substance has the structure according to Col. 2, lines 1-30, which reads on the structure of the adhesion promoter as instantly claimed, with a functional group X is covalently bonded to the metal surface, and a functional

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group Y which can be covalently bonded to the rubber during vulcanization and wherein the adhesion promoter can be applied as two separate components having desired functional groups including those of the polymeric coupling agent taught by Roseboom and can be as little as a mono-molecular layer (Abstract; Col. 1, line 64-Col. 2, line 50; Col. 3, lines 54-66; Col. 3, line 66-Col. 4, line 10; Col. 6, lines 16-51.) Hence, one having ordinary skill in the art at the time of the invention would have been motivated to incorporate the adhesion promoter structure taught by Garnier et al into the polymeric coupling agent taught by Roseboom et al to improve adhesion between the metal and the rubber. Further, it would have been obvious to one having ordinary skill in the art to utilize any conventional rubber material commonly utilized in the art and functionally equivalent to EPDM such as those as instantly claimed for the invention taught by Roseboom et al, and to provide the metal or steel substrate in any desired shape such as an elongated steel element as taught by Garnier et al based on the desired end use. Though Roseboom et al nor Garnier et al specifically teach that the metal or steel substrate comprises an alloy layer as instantly claimed, it is very well known and conventional in the art to treat the surface of a metal wire or cord or other metallic surface, particularly a steel surface, with a cladding metal such as copper, zinc, tin or alloys thereof, and particularly zinc or alloys thereof as in a galvanization process, including zinc-aluminum alloys, to pretreat the steel or improve the corrosion resistance of the steel, and hence one having ordinary skill in the art at the time of the invention would have been motivated to subject the steel substrate taught by Roseboom et al, in any desired shape such as an elongated element, to a galvanization process or metal cladding process with a conventional metal alloy such as brass or zinc alloys including zinc-aluminum alloys to provide improved corrosion resistance to the steel element.

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Response to Arguments

11. The Declaration and arguments filed 5/22/03 with regards to Claims 1-10, 12, and 15-21 have been considered but are moot in view of the new ground(s) of rejection. With regards to Claim 11, it is noted that Applicant's arguments in Paragraph 7 of the Declaration are based on the statement that Garnier et al do not teach a coating comprising a polymer however it is noted that Claim 11 is not directed to a coating comprising a polymer. Applicant's arguments and Paragraphs 7-9 of the Declaration with respect to Garnier et al (except Claim 11) and JP'134 have been fully considered and are persuasive. The rejections of 1-10, 12, 15 and 18-21 as recited in paragraphs 11-14 have been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


MONIQUE R. JACKSON
PRIMARY EXAMINER

Technology Center 1700
September 4, 2003